

# Shiloh Church Road Site

Unified Command Update

1/7/20

# Agenda

- Radiation-Contaminated Debris
  - Types of radiation debris discovered
  - Shipment
  - Storage
- Contaminated Soil (Property #1)
  - Contaminants of Concern
  - Shipments to date
  - Explanation of cadmium and lead as Hazardous Waste
  - Explanation of “Underlying Hazardous Constituents” requirements for Hazardous Waste Landfills
  - Explanation of disposal of hazardous wastes (RCRA) versus disposal of PCBs (TSCA)
  - Proposal for treatment and disposal of mixed wastes
- Drinking Water Contamination
  - Status of residential sampling
  - Status of new treatment systems
  - Drum excavation area finding
- Next Steps

# Radiation-Contaminated Debris

## Types of radiation debris discovered

COMMON RADIOLOGICAL ITEMS  
Shiloh Church Road Site • Nathalie, VA



Item Description: Circuit Breakers  
Isotope: Radium-226

COMMON RADIOLOGICAL ITEMS  
Shiloh Church Road Site • Nathalie, VA



Item Description: Dials, various sizes  
Isotope: Radium-226

**COMMON RADIOLOGICAL ITEMS**  
Shiloh Church Road Site • Nathalie, VA



**Item Description: Button Sources**  
**Isotope: Radium-226**

**COMMON RADIOLOGICAL ITEMS**  
Shiloh Church Road Site • Nathalie, VA



**Item Description: Switch, similar to button source on end of switch**  
**Isotope: Radium-226**



**COMMON RADIOLOGICAL ITEMS**  
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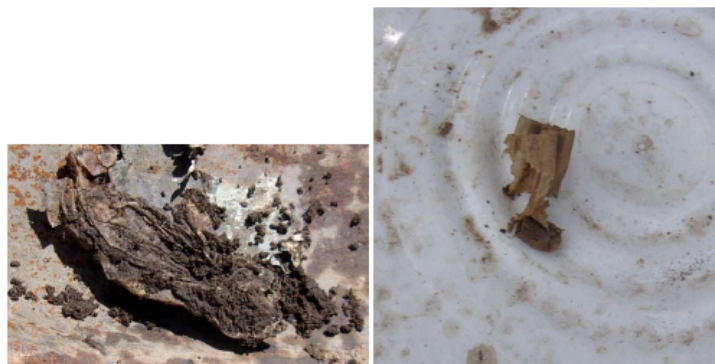
**Item Description: Cesium Boxes, look similar to car batteries**  
**Isotope: Cesium-137**

**COMMON RADIOLOGICAL ITEMS**  
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**Item Description: Aircraft Ice Detection Device**  
**Isotope: Strontium-90**

**COMMON RADIOLOGICAL ITEMS**  
Shiloh Church Road Site • Nathalie, VA



**Item Description: Paper-like material**  
**Isotope: Radium-226**

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**Item Description: Tubing, very small**  
**Isotope: Radium-226**

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**COMMON RADIOLOGICAL ITEMS**  
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**Item Description: Various Metal Items**  
**Isotope: Radium-226**

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**Item Description: Dirt, often solid blocks**  
**Isotope: Radium-226**

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# Radiation Debris – Shipment and Storage

- 11/19 – 1 drum + 3 boxes of soil (approx. 9 cubic yards) shipped to Curie Environmental in Idaho for disposal
- Remaining radiation debris on Site is very low level activity. No special storage requirements
- Awaiting final disposal once all excavation is completed

# Contaminated Soil – Property #1

- Contaminants of concern – Lead, Cadmium, PCBs, Dioxin
- Waste Staging Areas
  - Area #1 – PCBs <1000 mg/kg, Lead (D008) and Cadmium (D006)
  - Area #2 – PCBs < 50, Lead (D008) and Cadmium (D006)
  - IP Piles - PCBs > 1000, Lead (D008) and Cadmium (D006)
  - TSCA Pile – PCBs >50, Lead and Cadmium below HW limits
  - Drum Soil waste
- Soil and Debris disposal to Date
  - Area #2 – 132 tons (approx.)
  - PCB Debris – 360 tons (approx.)



# Metals vs. PCBs

RCRA (Resource Conservation Recovery Act )	TSCA (Toxic Substances Control Act)
Requirements for Hazardous Waste	Requirements for PCBs
Requirements for Landfills which accept HW (Subtitle C Landfills)	Regulates landfills that contain PCB waste
Contains Land Disposal Restriction (LDR) requirements regarding “what” can go into a HW Landfill	Soil and debris need to be segregated prior to arrival at PCB disposal facility

# Lead and Cadmium as Hazardous Waste

	Cleanup Goal	Total Metals Analysis Inorganics	TCLP Analysis Indicates whether the metal can leach
Lead	400	500-3000 (estimated)	>5 mg/l
Cadmium			> 1 mg/l

Areas of contamination are sampled for HW (TCLP) prior to excavation

*Contaminated soils which exceed the limits for TCLP are considered Hazardous Waste and must be disposed of at an approved Hazardous Waste facility*

Soil sent to a HW facility must be tested for Underlying Hazardous Constituents

# Underlying Hazardous Constituents

- **Underlying Hazardous Constituents (UHCs)** ... UHCs are trace amounts of **hazardous** chemicals (listed in 40 CFR 268.48) found in some **hazardous** wastes that do not in and of themselves cause the waste to be **hazardous**, but must be treated before the waste is deposited in a landfill. These substances must be treated to the **Universal Treatment Standards** prior to disposal.
- The soil which contains HW lead and cadmium **CANNOT** be accepted at **ANY** HW Subtitle C Landfill because of the UHCs (primarily dioxin)

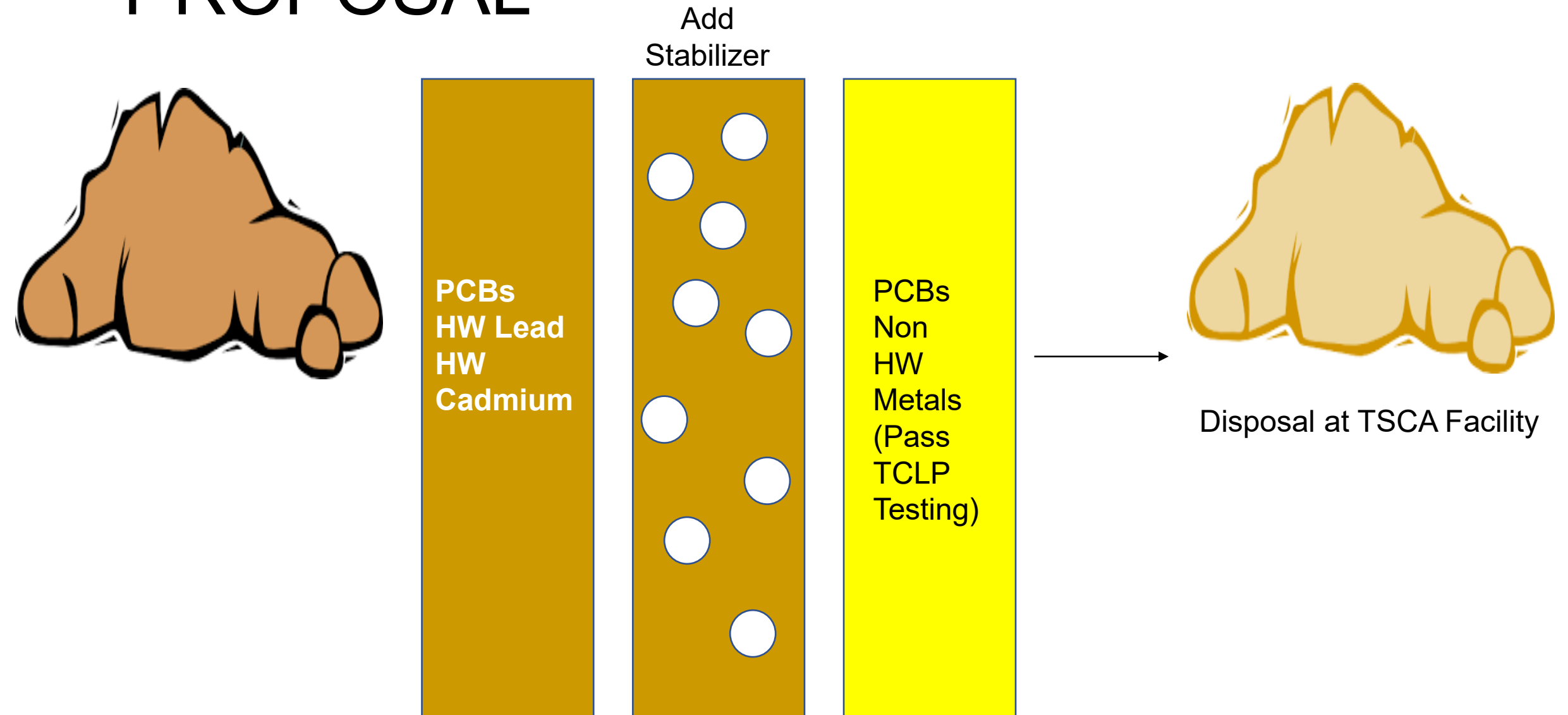
# Contaminated Soil – Property #1

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  - IP Piles - PCBs > 1000, Lead (D008) and Cadmium (D006)
- TOTAL ESTIMATE: 3800 cubic yards

HW Landfill	TSCA Landfill
Cannot accept ANY of the waste above because of UHC exceedances	Cannot accept wastes above IF waste is HW under RCRA



# PROPOSAL



# Residential water treatment systems

- 6 new installations (Kinetico)
- Quarterly sampling scheduled for 2 years
- One data gapped filled – no elevated levels of TCE or PCE
- Two data gaps still open

# Drum Soil Area Discussion



- Heaviest contamination in NW corner. Drums were located on E side
- Contaminants > 1 mg/kg
  - Ethylbenzenes
  - Xylenes
  - Cresol compounds
  - Trichloroethene

# Next Steps

- Begin treatment/disposal of HW/PCB contaminated soil
- Geoprobe survey to determine extent of soil contamination in drum pit area
- Removal actions at Property #2
- Delineate Property #3 for removal of battery casings